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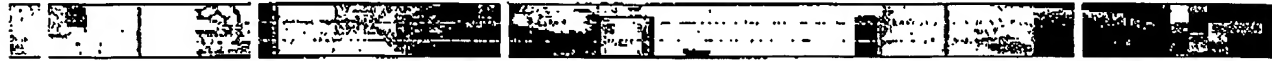
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## RESEARCH REPORT

### Questions and Answers About Homeopathy

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Homeopathy ("home-ee-AH-pah-thy"), also known as homeopathic medicine, is a form of health care that developed in Germany and has been practiced in the United States since the early 19th century. Homeopathic practitioners are commonly called homeopaths. This fact sheet answers some frequently asked questions on homeopathy and reviews scientific research on its use and effectiveness.

#### Key Points

- In homeopathy, a key premise is that every person has energy called a vital force or self-healing response. When this energy is disrupted or imbalanced, health problems develop. Homeopathy aims to stimulate the body's own healing responses.
- Homeopathic treatment involves giving extremely small doses of substances that produce characteristic symptoms of illness in healthy people when given in larger doses. This approach is called "like cures like."
- Various explanations have been proposed as to how homeopathy might work. However, none of these explanations has been scientifically verified.

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- Research studies on homeopathy have been contradictory in their findings. Some analyses have concluded that there is no strong evidence supporting homeopathy as effective for any clinical condition. However, others have found positive effects from homeopathy. The positive effects are not readily explained in scientific terms.
- It is important to inform all of your health care providers about any therapy that you are currently using or considering, including homeopathic treatment. This is to help ensure a safe and coordinated course of care.

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## 1. What is homeopathy?

The term homeopathy comes from the Greek words *homeo*, meaning similar, and *pathos*, meaning suffering or disease. Homeopathy is an alternative medical system. Alternative medical systems are built upon complete systems of theory and practice, and often have evolved apart from and earlier than the conventional medical approach used in the United States.<sup>a</sup> Homeopathy takes a different approach from conventional medicine in diagnosing, classifying, and treating medical problems.

Key concepts of homeopathy include:

- Homeopathy seeks to stimulate the body's defense mechanisms and processes so as to prevent or treat illness.
- Treatment involves giving very small doses of substances called remedies that, according to homeopathy, would produce the same or similar symptoms of illness in healthy people if they were given in larger doses.
- Treatment in homeopathy is individualized (tailored to each person). Homeopathic practitioners select remedies according to a total picture of the patient, including not only symptoms but lifestyle, emotional and mental states, and other factors.

a. Conventional medicine, as defined by NCCAM, is medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and by their allied health professionals, such as physical therapists, psychologists, and registered nurses. Some conventional medical practitioners are also practitioners of complementary and alternative medicine. To find out more about these terms, see the NCCAM fact sheet "[What Is Complementary and Alternative Medicine?](#)"

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## 2. What is the history of the discovery and use of homeopathy?

In the late 1700s, Samuel Hahnemann, a physician, chemist, and linguist in Germany, proposed a new approach to treating illness. This was at a time when the most common medical treatments were harsh, such as bloodletting,<sup>b</sup> purging, blistering, and the use of sulfur and mercury. At the time, there were few effective medications for treating patients, and knowledge about their effects was limited.

Hahnemann was interested in developing a less-threatening approach to medicine. The first major step reportedly was when he was translating an herbal text and read about a treatment (cinchona bark) used to cure malaria. He took some

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cinchona bark and observed that, as a healthy person, he developed symptoms that were very similar to malaria symptoms. This led Hahnemann to consider that a substance may create symptoms that it can also relieve. This concept is called the "similia principle" or "like cures like." The similia principle had a prior history in medicine, from Hippocrates in Ancient Greece--who noted, for example, that recurrent vomiting could be treated with an emetic (such as ipecacuanha) that would be expected to make it worse--to folk medicine.<sup>14,15</sup> Another way to view "like cures like" is that symptoms are part of the body's attempt to heal itself--for example, a fever can develop as a result of an immune response to an infection, and a cough may help to eliminate mucus--and medication may be given to support this self-healing response.

Hahnemann tested single, pure substances on himself and, in more dilute forms, on healthy volunteers. He kept meticulous records of his experiments and participants' responses, and he combined these observations with information from clinical practice, the known uses of herbs and other medicinal substances, and toxicology,<sup>1</sup> eventually treating the sick and developing homeopathic clinical practice.

Hahnemann added two additional elements to homeopathy:

- o A concept that became "potentization," which holds that systematically diluting a substance, with vigorous shaking at each step of dilution, makes the remedy more, not less, effective by extracting the vital essence of the substance. If dilution continues to a point where the substance's molecules are gone, homeopathy holds that the "memory" of them--that is, the effects they exerted on the surrounding water molecules--may still be therapeutic.
- o A concept that treatment should be selected based upon a total picture of an individual and his symptoms, not solely upon symptoms of a disease. Homeopaths evaluate not only a person's physical symptoms but her emotions, mental states, lifestyle, nutrition, and other aspects. In homeopathy, different people with the same symptoms may receive different homeopathic remedies.

Hans Burch Gram, a Boston-born doctor, studied homeopathy in Europe and introduced it into the United States in 1825. European immigrants trained in homeopathy also made the treatment increasingly available in America. In 1835, the first homeopathic medical college was established in Allentown, Pennsylvania. By the turn of the 20th century, 8 percent of all American medical practitioners were homeopaths, and there were 20 homeopathic medical colleges and more than 100 homeopathic hospitals in the United States.

In the late 19th and early 20th centuries, numerous medical advances were made, such as the recognition of the mechanisms of disease; Pasteur's germ theory; the development of antiseptic techniques; and the discovery of ether anesthesia. In addition, a report (the so-called "Flexner Report") was released that triggered major changes in American medical education. Homeopathy was among the disciplines negatively affected by these developments. Most homeopathic medical schools closed down, and by the 1930s others had converted to conventional medical schools.

In the 1960s, homeopathy's popularity began to revive in the United States. According to a 1999 survey of Americans and their health, over 6 million Americans had used homeopathy in the preceding 12 months.<sup>16</sup> The World Health Organization noted in 1994 that homeopathy had been integrated into the national health care systems of numerous countries, including Germany, the United Kingdom, India,

Pakistan, Sri Lanka, and Mexico.<sup>7</sup> Several schools of practice exist within homeopathy.<sup>12</sup>

Persons using homeopathy do so to address a range of health concerns, from wellness and prevention to treatment of injuries, diseases, and conditions. Studies have found that many people who seek homeopathic care seek it for help with a chronic medical condition.<sup>18,19,20</sup> Many users of homeopathy treat themselves with homeopathic products and do not consult a professional.<sup>13</sup>

b. Items 1-13 in the references served as general sources for this historical discussion.

c. Bloodletting was a healing practice used for many centuries. In bloodletting, incisions were made in the body to drain a quantity of blood, in the belief that this would help drain out the "bad blood" or sickness.

d. Toxicology is the science of the effects of chemicals on human health.

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### **3. What kind of training do homeopathic practitioners receive?**

In European countries, training in homeopathy is usually pursued either as a primary professional degree completed over 3 to 6 years or as postgraduate training for doctors.<sup>14</sup>

In the United States, training in homeopathy is offered through diploma programs, certificate programs, short courses, and correspondence courses. Also, homeopathic training is part of medical education in naturopathy.<sup>2</sup> Most homeopathy in the United States is practiced along with another health care practice for which the practitioner is licensed, such as conventional medicine, naturopathy, chiropractic, dentistry, acupuncture, or veterinary medicine (homeopathy is used to treat animals).

Laws about what is required to practice homeopathy vary among states. Three states (Connecticut, Arizona, and Nevada) license medical doctors specifically for homeopathy.

e. Naturopathy, also known as naturopathic medicine, is an alternative medical system that emphasizes natural healing approaches (such as herbs, nutrition, and movement or manipulation of the body). Some elements of naturopathy are similar to homeopathy, such as an intent to support the body's own self-healing response.

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### **4. What do homeopathic practitioners do in treating patients?**

Typically, in homeopathy, patients have a lengthy first visit, during which the provider takes an in-depth assessment of the patient. This is used to guide the selection of one or more homeopathic remedies. During followup visits, patients report how they are responding to the remedy or remedies, which helps the practitioner make decisions about further treatment.

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### **5. What are homeopathic remedies?**

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Most homeopathic remedies are derived from natural substances that come from plants, minerals, or animals. A remedy is prepared by diluting the substance in a series of steps (as discussed in [Question 2](#)). Homeopathy asserts that this process can maintain a substance's healing properties regardless of how many times it has been diluted. Many homeopathic remedies are so highly diluted that not one molecule of the original natural substance remains.<sup>22,23</sup> Remedies are sold in liquid, pellet, and tablet forms.

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## **6. How does the U.S. Food and Drug Administration (FDA) regulate homeopathic remedies?**

Because of their long use in the United States, the U.S. Congress passed a law in 1938 declaring that homeopathic remedies are to be regulated by the FDA in the same manner as nonprescription, over-the-counter (OTC) drugs, which means that they can be purchased without a physician's prescription. Today, although conventional prescription drugs and new OTC drugs must undergo thorough testing and review by the FDA for safety and effectiveness before they can be sold, this requirement does not apply to homeopathic remedies.

Remedies are required to meet certain legal standards for strength, quality, purity, and packaging. In 1988, the FDA required that all homeopathic remedies list the indications for their use (i.e., the medical problems to be treated) on the label.<sup>22,23</sup> The FDA also requires the label to list ingredients, dilutions, and instructions for safe use.

The guidelines for homeopathic remedies are found in an official guide, the *Homeopathic Pharmacopoeia of the United States*, which is authored by a nongovernmental, nonprofit organization of industry representatives and homeopathic experts.<sup>24</sup> The *Pharmacopoeia* also includes provisions for testing new remedies and verifying their clinical effectiveness. Remedies on the market before 1962 have been accepted into the *Homeopathic Pharmacopoeia of the United States* based on historical use, rather than scientific evidence from clinical trials.

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## **7. Have any side effects or complications been reported from the use of homeopathy?**

The FDA has learned of a few reports of illness associated with the use of homeopathic remedies. However, the FDA reviewed these reports and decided that the remedies were not likely to be the cause, because of the high dilutions.<sup>3</sup>

Here is some general information that has been reported about risks and side effects in homeopathy:

- Homeopathic medicines in high dilutions, taken under the supervision of trained professionals, are considered safe and unlikely to cause severe adverse reactions.<sup>25</sup>
- Some patients report feeling worse for a brief period of time after starting homeopathic remedies. Homeopaths interpret this as the body temporarily stimulating symptoms while it makes an effort to restore health.

- Liquid homeopathic remedies can contain alcohol and are permitted to have higher levels of alcohol than conventional drugs for adults. This may be of concern to some consumers. However, no adverse effects from the alcohol levels have been reported either to the FDA or in the scientific literature.<sup>3</sup>
- Homeopathic remedies are not known to interfere with conventional drugs; however, if you are considering using homeopathic remedies, you should discuss this with your health care provider. If you have more than one provider, discuss it with each one.

As with all medicinal products, a person taking a homeopathic remedy is best advised to:

- Contact his health care provider if his symptoms continue unimproved for more than 5 days.
- Keep the remedy out of the reach of children.
- Consult a health care provider before using the product if the user is a woman who is pregnant or nursing a baby.

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## 8. What has scientific research found out about whether homeopathy works?

This section summarizes results from (1) individual clinical trials (research studies in people) and (2) broad analyses of groups of clinical trials.

The results of individual, controlled clinical trials of homeopathy have been contradictory. In some trials, homeopathy appeared to be no more helpful than a placebo; in other studies, some benefits were seen that the researchers believed were greater than one would expect from a placebo.<sup>4</sup> Appendix I details findings from clinical trials.

Systematic reviews and meta-analyses take a broader look at collections of a set of results from clinical trials.<sup>5</sup> Recent examples of these types of analyses are detailed in Appendix II. In sum, systematic reviews have not found homeopathy to be a definitively proven treatment for any medical condition. Two groups of authors listed in Appendix II found some positive evidence in the groups of studies they examined, and they did not find this evidence to be explainable completely as placebo effects (a third group found 1 out of 16 trials to have some added effect relative to placebo). Each author or group of authors criticized the quality of evidence in the studies. Examples of problems they noted include weaknesses in design and/or reporting, choice of measuring techniques, small numbers of participants, and difficulties in replicating results. A common theme in the reviews of homeopathy trials is that because of these problems and others, it is difficult or impossible to draw firm conclusions about whether homeopathy is effective for any single clinical condition.

f. A placebo is designed to resemble as much as possible the treatment being studied in a clinical trial, except that the placebo is inactive. An example of a placebo is a pill containing sugar instead of the drug or other substance being studied. By giving one group of participants a placebo and the other group the active treatment, the researchers can compare how the two groups respond and get a truer picture of the active treatment's effects. In recent years, the definition of placebo has been expanded to include other things that could have an effect on the results of health care, such as how a patient and a

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health care provider interact, how a patient feels about receiving the care, and what he or she expects to happen from the care.

g. In a systematic review, data from a set of studies on a particular question or topic are collected, analyzed, and critically reviewed. A meta-analysis uses statistical techniques to analyze results from individual studies.

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## **9. Are there scientific controversies associated with homeopathy?**

Yes. Homeopathy is an area of complementary and alternative medicine (CAM) that has seen high levels of controversy and debate, largely because a number of its key concepts do not follow the laws of science (particularly chemistry and physics).

- It is debated how something that causes illness might also cure it.
- It has been questioned whether a remedy with a very tiny amount (perhaps not even one molecule) of active ingredient could have a biological effect, beneficial or otherwise.

There have been some research studies published on the use of ultra-high dilutions (UHDs) of substances, diluted to levels compatible with those in homeopathy and shaken hard at each step of dilution.<sup>h</sup> The results are claimed to involve phenomena at the molecular level and beyond, such as the structure of water, and waves and fields. Both laboratory research and clinical trials have been published. There have been mixed results in attempts to replicate them. Reviews have not found UHD results to be definitive or compelling.<sup>i</sup>

There have been some studies that found effects of UHDs on isolated organs, plants, and animals.<sup>16</sup> There have been controversy and debate about these findings as well.

- Effects in homeopathy might be due to the placebo or other non-specific effect.
- There are key questions about homeopathy that are yet to be subjected to studies that are well-designed--such as whether it actually works for some of the diseases or medical conditions for which it is used, and if so, how it might work.
- There is a point of view that homeopathy does work, but that modern scientific methods have not yet explained why. The failure of science to provide full explanations for all treatments is not unique to homeopathy.
- Some people feel that if homeopathy appears to be helpful and safe, then scientifically valid explanations or proofs of this alternative system of medicine are not necessary.

h. For some examples, see references 26-29.

i. For examples of debates on UHDs and reviewers' papers, see especially references 13, 15, and 30-33.

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## 10. Is NCCAM funding research on homeopathy?

Yes, NCCAM supports a number of studies in this area. For example:

- Homeopathy for physical, mental, and emotional symptoms of fibromyalgia (a chronic disorder involving widespread musculoskeletal pain, multiple tender points on the body, and fatigue).
- Homeopathy for brain deterioration and damage in animal models for stroke and dementia.
- The homeopathic remedy cadmium, to find out whether it can prevent damage to the cells of the prostate when those cells are exposed to toxins.

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### For More Information

- **NCCAM Clearinghouse**

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- **CAM on PubMed**

Web site: [www.nlm.nih.gov/nccam/camonpubmed.html](http://www.nlm.nih.gov/nccam/camonpubmed.html)

CAM on PubMed, a database on the Internet developed jointly by NCCAM and the National Library of Medicine, offers citations to (and in most cases, brief summaries of) articles on CAM in scientifically based, peer-reviewed journals. CAM on PubMed also links to many publisher Web sites, which may offer the full text of articles.

- **U.S. Food and Drug Administration (FDA)**

Web site: [www.fda.gov](http://www.fda.gov)

Toll-free: 1-888-INFO-FDA (1-888-463-6332)

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FDA's mission is to promote and protect the public health by helping safe and effective products to reach the market in a timely way, and monitoring them for safety after they are in use. On homeopathy, see especially a 1996 article from *FDA Consumer* magazine at [www.fda.gov/fdac/features/096\\_home.html](http://www.fda.gov/fdac/features/096_home.html).

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## Appendix I.

### Clinical Trials on Homeopathy Published from 1998 to 2002

Citation	Description	Findings
Vickers and Smith, 2002 <sup>24</sup>	Seven trials were included in the review (three prevention and four treatment trials); only two studies had sufficient information for complete data extraction.	The homeopathic remedy <i>oscillococcinum</i> appears safe and effective in reducing the duration of <b>influenza</b> , but has no effect on prevention.
Lewith et al., 2002 <sup>25</sup>	Randomized, double-blinded, placebo-controlled trial of 242 participants aged 18 to 55 years.	Trial compared an oral homeopathic treatment to placebo in <b>asthmatic people allergic to house dust</b> . Authors found the homeopathic treatment "no better than placebo." They noted "some differences between the homeopathic Immunotherapy and placebo for which we have no explanation."
Oberbaum et al., 2001 <sup>26</sup>	Randomized, double-blinded, placebo-controlled trial in 32 children; 30 completed the study.	Traumeel S, a homeopathic skin cream, may significantly reduce the severity and length of <b>pain and inflammation of the tissues lining the inside of the mouth from chemotherapy</b> in children being treated with bone marrow transplantation.
Taylor et al., 2000 <sup>26</sup>	Randomized, double-blinded, placebo-controlled trial of 51 participants aged 17 years or older (50 completed the study).	Team tested the hypothesis that homeopathy is a placebo by examining effects of an oral homeopathic preparation in patients with <b>perennial allergic rhinitis</b> . They found a "significant objective improvement in nasal airflow" compared with the placebo group. However, both groups reported subjective improvement in "nasal symptoms" (with no statistically significant difference between groups). Authors concluded that the objective evidence supports that

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		"homeopathic dilutions differ from placebo."
Jacobs et al., 2000 <sup>37</sup>	Randomized, double-blinded, placebo-controlled trial of 126 children; 116 completed the study.	Individualized homeopathic treatments improved digestive problems in children with acute childhood diarrhea. Results are consistent with findings of a previous study.
Weiser et al., 1999 <sup>38</sup>	Randomized, double-blinded trial of 146 people.	For the treatment of hay fever, a homeopathic nasal spray is as efficient and well tolerated as a conventional therapy, cromolyn sodium.
Rastogi et al., 1999 <sup>39</sup>	Randomized, double-blinded, placebo-controlled trial of 100 people between 18 and 50 (71 percent male/29 percent female).	A subgroup of patients with HIV in the symptomatic phase, receiving treatment, had increased levels of CD4 cells at the end of the trial; the placebo subgroup did not.
Vickers et al., 1998 <sup>40</sup>	Randomized, double-blinded, placebo-controlled trial of 519 people; 400 completed the study.	Homeopathic remedies, including arnica, are not effective for muscle soreness following long-distance running.
Weiser et al., 1998 <sup>41</sup>	Randomized, double-blinded, controlled trial of 119 people; 105 completed the study.	The homeopathic treatment vertigoheel, and the standard treatment of betahistline, are equally effective in reducing the frequency, duration, and intensity of vertigo attacks.

J. Due to the large number of trials, these studies have been selected to give a representative overview of the findings published in peer-reviewed scientific and medical journals in English and indexed in the National Library of Medicine's MEDLINE database.

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## Appendix II.

### Systematic Reviews and Meta-Analyses of Clinical Trials of Homeopathy

Citation	Description	Findings
Ernst, 2002 <sup>39</sup>	Analyzed 17 systematic reviews (including meta-analyses) of controlled clinical trials for homeopathy.	Author found that the reviews failed to provide strong evidence in favor of homeopathy. No homeopathic remedy was proven by convincing evidence to yield clinical effects that are different from placebo or from other control intervention for any medical condition. Positive recommendations for use of homeopathy in clinical practice are not supported, and "homeopathy cannot be viewed as an evidence-based form of therapy" until

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		more convincing results are available.
Ude et al., 2001 <sup>42</sup>	Analyzed the methodological quality of 207 randomized trials collected for 5 previously published reviews on homeopathy, two herbal medicines (St. John's wort and echinacea), and acupuncture.	Authors found that the majority of trials had major weaknesses in methodology and/or reporting. Homeopathy trials were "less frequently randomized...and reported less details on dropouts and withdrawals" than the other types.
Cucherat et al., 2000 <sup>17</sup>	Analyzed 16 randomized, controlled trials (17 comparisons were made) comparing homeopathic treatment to placebo. Work was part of a report prepared for the European Union on the effectiveness of homeopathy.	Authors found that the "strength of evidence remains low" because of trial flaws and other limitations. They added that "at least one [of the tested homeopathic treatments] shows an added effect relative to placebo." Group recommended that homeopathy be studied further using the same methods used to study conventional medicine.
Ernst and Pittler, 1998 <sup>43</sup>	Systematic review of eight trials.	Rigorous clinical trials indicate amica is not more effective than a placebo; most trials studied use of amica for tissue trauma.
Linde et al., 1997 <sup>5</sup>	Analyzed 89 trials. Each trial was controlled; compared homeopathy to a placebo; was either randomized or double-blinded; and yielded a written report.	Authors concluded that their results were not compatible with a hypothesis that the clinical effects of homeopathy are completely due to placebo. However, they found insufficient evidence that homeopathy is clearly efficacious for any single clinical condition. They stated that further research is warranted if it is rigorous and systematic.
Kleijnen et al., 1991 <sup>21</sup>	Assessed 105 controlled trials of homeopathy, 68 randomized.	Authors found a positive trend in the evidence, regardless of the quality of the trial or the method of homeopathy used. They cautioned, however, that definitive conclusions about homeopathy could not be drawn, because many of the trials were not of good quality and the role of publication bias was unknown.
<b>Systematic Reviews of Clinical Trials on Single Medical Conditions</b>		
Long and Ernst, 2001 <sup>44</sup>	Systematic review of four osteoarthritis clinical trials.	Research on homeopathic treatment for osteoarthritis is insufficient to reliably assess the clinical effectiveness of homeopathic treatment of osteoarthritis.
Jonas et al., 2000 <sup>45</sup>	Meta-analysis of six controlled clinical trials.	Controlled clinical trials indicate that homeopathic remedies appear to work better than a placebo in studies of rheumatic syndromes, but there are too

few studies to draw definitive conclusions,  
and efficacy results are mixed.

k. Systematic reviews and meta-analyses are defined in [note g](#).

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## SUD-CHEMIE

Creating Performance Technology

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### What is Bentonite

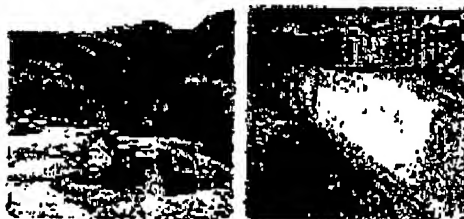
#### What is Bantonite?

- Bentonite is a relatively soft stone, formed over geological time by the natural alteration of volcanic tuffs.
- Bentonite is composed of plate-silicate minerals, and belongs to the group of minerals known as aluminosilicates. (Belonging to the Smectite group in the clay classification).

Commercial Bentonite deposits are rare.

#### STRUCTURE AND COMPOSITION OF BENTONITE?

- Bentonite is CLAY mineral whose main constituent is "MONTMORILLONITE".
- Montmorillonite has been identified in France by Damour and Salvétat in 1847 on a small mine nearby Montmorillon city.
- The first Industrial exploitation at the beginning of the 20th Century run with a mine located near Font Benton in the Wyoming state explaining the origin of the word "Bentonite" which was at the beginning a trade name.
- Montmorillonite is a Hydrus alumina silicate with exceptional behaviour due to its crystallographic structure.



Bentonite Mine

#### STRUCTURE OF BENTONITE

- The basic layer is composed of 2 tetrahedral  $\text{SiO}_2$  layers with an octahedral layer of mainly  $\text{Al}_2\text{O}_3$  in the middle which can be replaced by Al, Mg or Fe.
- Thickness of this basic layer is about 10 Angstrom.
- Between each basic elementary layer the existing water makes possible the introduction of the sodium-called exchangeable cations.

Therefore, a chemical treatment to substitute the Cation by the Na cation is necessary. This is the activation process that consists in mixing bentonite with sodium carbonate (at particular conditions: moisture, mechanical treatment and temperature combined).

Bentonites obtained are called "Sodium Activated Bentonite".

In the nature, existing exchangeable cations are:  
- calcium: Natural Calcium Bentonite

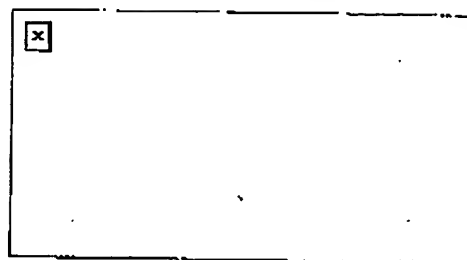
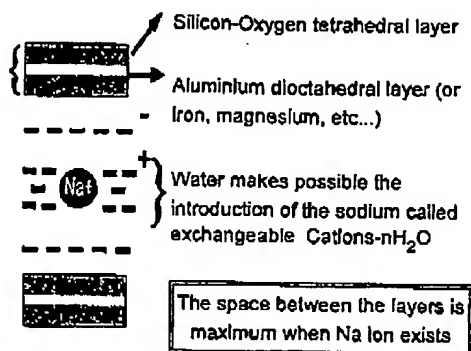
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- sodium: Natural Sodium Bentonite

Most exploited mines in the world are Natural Calcium Bentonites.



Na ion

Ca ion

Production

#### Production & Operation

Mine and Plant : Qingfengshanxiang, Jianping, 122429 Liaoning Province, China

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